Unit 1:

Equal Partitioning

Timing

4-5 weeks

Essential Questions

1. What are decimals and fractions and how can they be represented?
2. How do you read and write decimals?
3. How do you find equivalents for fractions and decimals?
4. How do you compare and order fractions and decimals?
5. What is the relationship between place values?

Big Ideas

BIG IDEA 1: The relationship of digits and their values communicate information about the fractional part of a number.

BIG IDEA 2: Equivalencies exist among fractions and decimals and can be compared and ordered.

Objectives:

5.N.2.2 Represent, read and write decimals using place value to describe decimal numbers including fractional numbers as small as thousandths and whole numbers as large as millions.
5.N.3.4 Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.
5.N.2.1 Represent decimal fractions (e.g., 1/10, 1/100) using a variety of models (e.g., 10 by 10 grids, rational number wheel, base-ten blocks, meter stick) and make connections between fractions and decimals.
5.N.2.4 Recognize and generate equivalent decimals, fractions, mixed numbers, and fractions less than one in various contexts.
5.N.2.3 Compare and order fractions and decimals, including mixed numbers and fractions less than one, and locate on a number line.
***5.GM.3.2** Choose an appropriate instrument and measure the length of an object to the nearest whole centimeter or 1/16-inch.
***5.GM.3.3** Recognize and use the relationship between inches, feet, and yards to measure and compare objects.
***5.GM.3.4** Recognize and use the relationship between millimeters, centimeters, and meters to measure and compare objects.

Unit 2: Whole Number Operations

Timing

4-5 weeks

Essential Questions

1. How can the outcome of division be communicated?
2. What information can be gathered from division?
3. How can we represent and solve real-world situations using all operations and unknowns?

Big Ideas

BIG IDEA 1: Whole numbers can be divided to solve real world problems.

BIG IDEA 2: Students can use multiple strategies to achieve accurate results of real world problems.

Objectives

5.N.1.1 Estimate solutions to division problems in order to assess the reasonableness of results.
5.N.1.2 Divide multi-digit numbers, by one- and two-digit divisors, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.
5.N.1.3 Recognize that quotients can be represented in a variety of ways, including a whole number with a remainder, a fraction or mixed number, or a decimal and consider the context in which a problem is situated to select and interpret the most useful form of the quotient for the solution.
5.N.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication, and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
***5.A.2.3** Evaluate expressions involving variables when values for the variables are given.
***5.A.2.2** Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.
***5.A.2.1** Generate equivalent numerical expressions and solve problems involving whole numbers by applying the commutative, associative, and distributive properties and order of operations (no exponents).

Unit 3: Decimal and Fraction Operations

Timing

5-6 weeks

Essential Questions

1. How can estimation help determine reasonableness?
2. How do we add and subtract decimal numbers?
3. How are decimals related to money in the real world?
4. How does understanding fractions on a number line help with determining the reasonableness of an answer?
5. How do we add or subtract fractions to answer real world problems?

Big Ideas

BIG IDEA 1: The same reasoning for calculating with whole numbers applies to decimals since they are an extension of the base 10 number system.
BIG IDEA 2: Adding and subtracting fractions require same size parts.

Objectives

5.N.3.1 Estimate sums and differences of fractions with like and unlike denominators, mixed numbers, and decimals to assess the reasonableness of the results.
5.N.3.2 Illustrate addition and subtraction of fractions with like and unlike denominators, mixed numbers, and decimals using a variety of representations (e.g., fraction strips, area models, number lines, fraction rods).
5.N.3.3 Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals, using efficient and generalizable procedures, including but not limited to standard algorithms in order to solve real-world and mathematical problems including those involving money, measurement, geometry, and data.
5.N.3.4 Find 0.1 more than a number and 0.1 less than a number. Find 0.01 more than a number and 0.01 less than a number. Find 0.001 more than a number and 0.001 less than a number.
***5.A.2.1** Generate equivalent numerical expressions and solve problems involving whole numbers by applying the commutative and associative properties and order of operations (no exponents).
***5.A.2.2** Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.

***5.A.2.3** Evaluate expressions involving variables when values for the variables are given.

Unit 4: Patterns, Relationships, and Data

Timing

5-6 weeks

Essential Questions

1. How do we create graphs from data sets to create visuals for the real world?
2. How do we analyze the data from a graph and what do we do with it?
3. How do we find patterns of change to make predictions and generalizations within data sets?
4. How can we visualize patterns of change?
5. How do we work with equations and expressions to solve problems?
6. How do we apply the order of operations to an equation or expression?

Big Ideas

BIG IDEA 1: Operational knowledge is required to analyze graphs and data sets.
BIG IDEA 2: Tables and rules can be used to visualize patterns of change on a coordinate plane.
BIG IDEA 3: Properties and Order of Operations are used to evaluate and compare expressions.

Objectives

5.D.1.1 Find the measures of central tendency (mean, median, or mode) and range of a set of data. Understand that the mean is a "leveling out" or central balance point of the data.
5.D.1.2 Create and analyze line and double-bar graphs with whole numbers, fractions, and decimals increments.
5.N.1.2 Divide multi-digit numbers, by one- and two-digit divisors, using efficient and generalizable procedures, based on knowledge of place value, including standard algorithms.
5.N.1.4 Solve real-world and mathematical problems requiring addition, subtraction, multiplication, and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
5.A.1.1 Use tables and rules of up to two operations to describe patterns of change and make predictions and generalizations about real-world and mathematical problems.
5.A.1.2 Use a rule or table to represent ordered pairs of whole numbers and graph these ordered pairs on a coordinate plane, identifying the origin and axes in relation to the coordinates.

5.A.2.1 Generate equivalent numerical expressions and solve problems involving whole numbers by applying the commutative, associative, and distributive properties and order of operations (no exponents).

5.A.2.3 Evaluate expressions involving variables when values for the variables are given.

5.A.2.2 Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.

Unit 5: Two-Dimensional Forms

Timing

8-10 weeks

Essential Questions

1. How can you collect information about two-dimensional shapes?
2. How can we identify similarities and differences in geometric figures?
3. How do we communicate the outcome of measurement?
4. What information can we gather from measuring?

Big Ideas

BIG IDEA 1: Angle measurements must be used to classify triangles.
BIG IDEA 2: Customary and metric measurement can be used to find perimeter.
BIG IDEA 3: Capacity of rectangular prisms can be found with cubes and dimension measurement.
BIG IDEA 4: Understanding of 3-dimensional figures is necessary to find surface area.

Objectives

5.GM.1.1 Describe, classify and construct triangles, including equilateral, right, scalene, and isosceles triangles. Recognize triangles in various contexts.
5.GM.1.2 Describe and classify three-dimensional figures including cubes, rectangular prisms, and pyramids by the number of edges, faces or vertices as well as the shapes of faces.

5.GM.2.3 Find the perimeter of polygons and create arguments for reasonable values for the perimeter of shapes that include curves.
5.GM.2.1 Recognize that the volume of rectangular prisms can be determined by the number of cubes (n) and by the product of the dimensions of the prism (axbxc = n). Know that rectangular prisms of different dimensions (p, q, and r) can have the same volume if axbxc = pxqxr = n.
5.N.3.3 Add fractions with like and unlike denominators, mixed numbers, and decimals, using efficient and generalizable procedures, including but not limited to standard algorithms in order to solve real-world and mathematical problems including those involving geometry.
5.N.1.4 Solve real-world and mathematical problems using multiplication of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.
5.A.2.1 Generate equivalent numerical expressions and solve problems involving whole numbers by applying the commutative and associative properties and order of operations (no exponents).

5.GM.1.3 Recognize and draw a net for a three-dimensional figure (e.g., cubes, rectangular prisms, pyramids).
5.GM.2.2 Recognize that the surface area of a three-dimensional figure with rectangular faces with whole numbered edges can be found by finding the area of each component of the net of that figure. Know that three-dimensional shapes of different dimensions can have the same surface area.
5.GM.3.1 Measure and compare angles according to size.
5.GM.3.2 Choose an appropriate instrument and measure the length of an object to the nearest whole centimeter or 1/16-inch.

5.GM.3.3 Recognize and use the relationship between inches, feet, and yards to measure and compare objects.
5.GM.3.4 Recognize and use the relationship between millimeters, centimeters, and meters to measure and compare objects.

Unit 6: Three-Dimensional Forms

Timing

2-3 weeks

Essential Questions

1. What information can we gather from measuring?
2. How do we communicate the outcome of measurement?
3. What information can you gather from three-dimensional forms?
4. How can we identify similarities and differences in geometric figures?
5. What could happen if you deconstruct a three-dimensional figure?
6. How does surface area occur in the real world?

Big Ideas

BIG IDEA 1: Capacity of rectangular prisms can be found with cubes and dimension measurement.

BIG IDEA 2: Understanding of three-dimensional figures is necessary to find surface area.

Objectives

5.GM.1.2 Describe and classify three-dimensional figures including cubes, rectangular prisms, and pyramids by the number of edges, faces or vertices as well as the shapes of faces.

5.GM.1.3 Recognize and draw a net for a three-dimensional figure (e.g., cubes, rectangular prisms, pyramids).

5.GM.2.1 Recognize that the volume of rectangular prisms can be determined by the number of cubes (n) and by the product of the dimensions of the prism (axbxc = n). Know that rectangular prisms of different dimensions (p, q, and r) can have the same volume if axbxc = pxqxr = n.

5.GM.2.2 Recognize that the surface area of a three-dimensional figure with rectangular faces with whole numbered edges can be found by finding the area of each component of the net of that figure. Know that three-dimensional shapes of different dimensions can have the same surface area.

***5.N.1.4** Solve real-world and mathematical problems requiring addition, subtraction, multiplication, and division of multi-digit whole numbers. Use various strategies, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.

***5.N.2.1** Represent decimal fractions (e.g., 1/10, 1/100) using a variety of models (e.g., 10 by 10 grids, rational number wheel, base-ten blocks, meter stick) and make connections between fractions and decimals.